



GEORGETOWN UNIVERSITY
Department of Physics



Graduate Student Handbook
2017-2018

Welcome to the Department of Physics!

The Graduate Student Handbook covers academic topics including registration information, requirements for Ph.D. and Master's degrees, and the graduate student honor code. A section on financial aid addresses assistantships, additional employment, and taxes. Information about the Industrial Leadership in Physics program is also included. For more information on any of these topics, please contact the [Graduate Program Coordinator \(GPC\)](#). An effort has been made to include links to various sections, policies and forms. If any links are no longer active, please contact the GPC. The information presented below has been reduced for quick reference, more detailed information on policies and procedures is available from the [Graduate School](#).

GRADUATE BULLETIN

The [Graduate Bulletin](#) for the 2017-2018 Academic Year is now Available.

Contents

1.	General Information.....	5
2.	Assistantship: Teaching and Research	6
	Annual Stipend	6
	Summer Funding	6
	Teaching Assistantships.....	7
	Research Assistantships.....	7
	Awards & Fellowships	7
	Additional Jobs	8
	Taxes.....	8
	Graduate School Policies.....	8
3.	Registration	9
	Course Registration.....	9
	Registration Holds	9
	Undergraduate Courses Taken for Graduate Credit	9
4.	Expectations of Graduate Student Integrity	10
5.	Expectations of Graduate Student Progress (M.S. & Ph. D.).....	10
	Benchmarks	10
	Requirements	11
	Annual Progress Report.....	11
	First Year	11
	Review of Reports	12
6.	Additional Requirements for Graduate Students.....	13
	Colloquium	13
	First Years.....	13
	Subsequent Years.....	13
	Intellectual Property Course	13
	Lab Rotations.....	13
7.	Ph. D. Degree Requirements.....	14
	Coursework.....	14
	Comprehensive Examination.....	15
	Thesis Committee	15
	Qualifying Examination.....	16
	<i>ILP Program Track.....</i>	<i>16</i>
	<i>Standard Track</i>	<i>16</i>
	<i>Both the ILP and Standard Track.....</i>	<i>16</i>
	Dissertation Proposal	16
	Dissertation and Defense Preparation.....	17
	Defense	17
	Elective Credit and Plan Modifications	18

	Master's in Passing	18
8.	Master's Degree Requirements	19
	Master's Options	19
	Thesis	20
	Elective Credit and Plan Modifications	20
9.	ILP Apprenticeship	21
	Special Considerations for International Students	21
10.	Industrial Leadership in Physics Organization (ILPO).....	21
11.	FAQs	22
	Q. What vacation and/or paid leave does a student receive?.....	22
	Q. What if I want to travel during the summer months?	22
	Q. Is there an Honor code for Graduate Students?	22
	Q. How safe are a student's personal belongings?	22
	Q. Do graduate students have to pay the Yates Fee?.....	22
	Q. When do classes begin and end? When are breaks?.....	22
12.	University Support Resources	22

1. General Information

The Graduate Student Handbook covers academic topics including registration information, requirements for Ph.D. and Master's degrees, and the graduate student honor code. A section on financial aid addresses assistantships, additional employment, and taxes. Information about the Industrial Leadership in Physics program is also included. The official Graduate Student Handbook resides on the department website and will be updated frequently. For more information on any of these topics, please contact the Graduate Program Coordinator.

Location 5th Floor, Reiss Science Building
Georgetown University
Department of Physics
Mailing Address Reiss Science Building, Room 506
37th & O Streets, NW
Washington, DC. 20057-0095

Telephone Numbers

Department Main Office (202) 687-5984
Department Fax (202) 687-2087
Graduate Program Office (202) 687-5592

Personnel (2017 – 2018)

Department Chair Jeff Urbach
Director of Graduate Studies (DGS) Paola Barbara
Graduate Program Coordinator (GPC) Amy Hicks
Administrative Officer Mary Rashid
Secretary Janet Gibson
Paola Barbara
Dan Blair
Graduate Committee Jim Freericks
Peter Olmsted
Makarand Paranjape

Graduate Student Offices

Reiss 501A (202) 687-2301
Reiss 556
Regents 116 (202) 784-7159

2. Assistantship: Teaching and Research

Annual Stipend

The Doctorate Program in Physics is a funded program to earn a Ph.D.: Doctoral students receive a stipend for their service to the Department's academic and research initiatives. As such, the Graduate School promises 5 years of full financial support for full-time Ph.D. students who maintain satisfactory academic progress.

Note: The Master's program, however, is a paid program and does not have a funded component.

- **First and Second Years:** Supported by Teaching Assistantships from the Graduate School
- **Third Year and Beyond:** Supported through *Research Assistantships* with funds provided by a combination of fellowships, faculty research grants, and departmental funds
- **Apprenticeships:** Supported by ILP partner through a grant

The stipend for the academic year is set each year by the Graduate School. *For the 2017-18 academic year, the stipend is \$28,000.* This stipend is paid bi-weekly from September through April. Summer funding is separate and described below.

More information is available on the Graduate School's website and at the Graduate School Policies section.

Summer Funding

From May through August, the Physics Department provides full-time Ph.D. students a summer stipend. Note: The summer stipend is significantly less than the stipend during the academic year, so students should plan accordingly. The summer stipend type and amount depends on how far along the student is in the program:

- **First Year:** Receive a non-service fellowship, a single payment of \$5,500
 - Prepare for the [Comprehensive Exam](#)
 - Engage in [Lab Rotations](#)
- **Subsequent Years:** Receive a bi-weekly service stipend for research
 - Receive \$5,500 before taking and passing the [Qualifying Exam](#)
 - Increased to \$6,500 after passing the Qualifying Exam

Teaching Assistantships

Whether working in industry, academia, or the public sector, a scientist must be able to communicate effectively with different audiences. Working as a Teaching Assistant (TA) helps students develop these skills. It also provides opportunities for students to solidify their understanding of basic physics. In the Physics Department, graduate student TAs lead laboratory and tutorial sections of undergraduate physics courses. Course materials are provided by a faculty instructor. Preparation is the key to success. Most TA assignments include a mandatory weekly TA meeting during which TAs work through the laboratory or tutorial activities together, try to identify technical and conceptual problems that might arise in class, and discuss strategies for addressing these issues. The meeting may also involve equipment set-up. In addition, most TAs are expected to hold office hours and grade homework, labs, or exams.

To avoid potential conflicts of interests, a graduate student who is working as a TA for a course should not simultaneously serve as a paid tutor for a student in that course.

Assistantships (and fellowships) include a stipend and a full-tuition scholarship, though this may not be the case for all Master's students. For 2017-2018, stipends for doctoral arts and sciences programs are \$28,000, while stipends for Master's students in the arts and sciences could range from \$1,100 to \$28,000.

Research Assistantships

Students are effectively paid to perform research. They begin research assistantships with a faculty mentor in their 2nd or 3rd year. Research assistants receive a stipend, a full tuition waiver, and health-insurance coverage during their assistantship. Often, students in the ILP track will continue to perform research in collaboration with the company that sponsored their apprenticeship.

Awards & Fellowships

- The Department awards the Walter G. Mayer endowed merit-based scholarship in experimental Physics on an annual basis. Application and recipient information is available at the [Mayer Scholarship](#) webpage.
- Several students in the Department have also been awarded scholarships through the [ARCS Foundation](#).

Additional Jobs

Graduate School Assistantships carry a service responsibility of 15 hours a week. During the academic year, no graduate student may work more than 20 hours per week while on an assistantship. Under Graduate School regulations, students may therefore work up to 5 additional hours per week for Georgetown University. Students are responsible for ensuring they do not work more than 20 hours per week. International students should be especially vigilant. If international students work more than 20 hours per week, they will be in violation of immigration law.

Students receiving a non-service fellowship stipend (e.g., the summer stipend between the first and second years), are not permitted to work for Georgetown University.

The Physics Department strongly discourages students on an assistantship from seeking additional work, as the purpose of the assistantship is to allow students to focus on coursework or research. Taking on additional work can interfere with academic progress, and failure to maintain satisfactory progress can result in termination of the assistantship. Recent policy changes states that, first year Ph.D. students will not have the ability to serve the institution in addition to their stipend responsibilities.

Taxes

- Consult the [Taxes section](#) of the Financial Aid Recourses page to determine what forms you may need to file
- Complete the [I-9 Form](#)
- International students should meet with [Lawrence Smith](#) at the Division of Financial Affairs before beginning a Teaching Assistantship

Graduate School Policies

All students receiving some form of graduate school financial aid must abide by the policies and procedures set forth in the following documents:

- [Recipient Orientation Statement 2017-18](#)
 - *These are the policies and procedures that will govern merit-based financial aid in the 2017-18 academic year*
- [Graduate Bulletin](#)
 - *These are the academic policies and procedures for graduate students enrolled in a graduate program for arts and sciences*
- [Council of Graduate School Agreement](#)
 - *This is a statement from the Council of Graduate Schools regarding the admissions cycle*
- [Policies](#)
 - *General Graduate School and University policies*

3. Registration

Couse Registration

- **First Year Students:** registered for courses by the Graduate Program Coordinator
- **Second Year Students:** students register for the appropriate courses through [MyAccess](#) in a timely manner
- **Third Year Students:** students register for Thesis Research
 - Register for [Thesis Research Section 1](#) if no additional classes are taken
 - Register for [Thesis Research Section 3](#) if taking any additional classes or electives
- **Fourth Year and Beyond:** students are registered automatically for Thesis Research

Registration Holds

A registration hold may be placed on a student's record for a variety of reasons.

Common Causes:

- Failure to supply [documentation of immunizations](#)
- Outstanding balance with the [Office of Student Accounts](#)
- Incomplete forms with the [Office of Student Financial Services](#)
- [Incomplete academic records](#) with the Graduate School

Appropriate Actions

- Contact that appropriate office or department and clear the hold before registration
- Clear registration holds and register **before** the end of the [Add/Drop Period](#) or risk withdrawal from the University
- Request graduate credit for an undergraduate course as required (see below)

Undergraduate Courses Taken for Graduate Credit

A student may request graduate credit for an undergraduate course to complete degree requirements or as a substitute for a required course provided that courses is numbered 350 or above.

4. Expectations of Graduate Student Integrity

Please refer to the [Graduate Bulletin](#) for the complete guidelines on academic integrity. The main themes are:

1. Adhere to the values of “honesty, trust, fairness, respect, and responsibility”
2. Maintain the highest standards of academic integrity while pursuing of their academic goals
3. Eschew misconduct including, but is not limited to:
 - Plagiarism
 - Unacknowledged paraphrasing
 - Cheating
 - Data fabrication
 - Fabrication, alteration, or misrepresentation of academic records
4. Refrain from other academic misconduct includes:
 - Facilitating academic dishonesty
 - Collaborating in an unauthorized manner
 - Misuse of otherwise valid academic work
 - Misuse of academic resources
 - Depriving others of equal access to academic resources

Cases of alleged academic misconduct are adjudicated by the [Dean of the Graduate School](#). Anyone who has reason to believe that a graduate student has acted in violation of academic integrity standards is urged to report the case in writing.

5. Expectations of Graduate Student Progress (M.S. & Ph. D.)

Benchmarks

The Georgetown graduate experience is tailored to match your academic and professional goals. The process is straight-forward, but as with any program, there are certain benchmarks that help you chart your path. Please find a brief outline of those steps, below.

1. Complete 34 hours of [credit hours](#) and choose an appropriate academic track:
 - **[Industrial Leadership in Physics \(ILP\) Track](#)**:
 - 3 semesters of [coursework](#) in Physics
 - Compliment with business courses from the [McDonough School of Business](#)
 - Participate in an 11.5-month [Industrial Apprenticeship](#)
 - **Standard Physics Track**: 4 semesters of coursework in Physics with extensive laboratory research

2. Participate in 2 [Integrative Experiences](#) immediately following the first 2 spring semesters
 - One week group project aimed at integrating coursework
 - Encourages team building and problem solving skills
 - Focuses on a particular technological problem based on a real world need
3. Successfully pass the [Comprehensive Examination](#) after the first year of coursework, one month after spring semester
4. Attend [Physics Colloquium](#) series
5. [Conduct research](#) in several department laboratories to gain access to practical skills in different disciplines
 - Provides exposure to multiple disciplines
 - Participate in 1 lab rotation (non-credit) over the summer and 2 lab rotations (each worth 1.5 credits) during the fall semester of their second year
 - Requires about 10 hours/week
 - Results in the selection of an Academic Advisor
6. Work directly with an Academic Advisor to gain expertise in a discipline
7. Cultivate a relationship with an [Industrial Advisor](#) to gain insight into real world opportunities
8. Form a [Thesis Committee](#), conduct thesis research, pass the [Qualifying Examination](#)
9. Conduct research and write a [Dissertation](#)

Requirements

To earn the Ph.D. in Physics, a student must satisfy the following requirements:

1. Perform well and earn 34 credits in the [coursework](#) (maintain a GPA of 3.0 or above)¹
2. Participate in the [Integrative Experience](#) after the 1st 2 semesters of coursework
3. Complete 3 [Lab Rotations](#) and choose an Academic Advisor
4. Pass the [Comprehensive Examination](#), typically before beginning their second year
5. Pass the [Qualifying Examination](#), within 18 months of completing coursework or directly after an apprenticeship
6. Research, write and defend a [Dissertation](#)²

Annual Progress Report

Students are required to submit an Annual Progress Report by September 15th of detailing their work over the previous year. Review of these reports will serve as one of the means for determining satisfactory academic progress within the program.

First Year

¹ The Graduate School requires a minimum GPA of 3.0 at graduation. Therefore, when a student's GPA falls below this level, or when a student receives an "F" in a course, the student will receive warnings from the Graduate School. Receipt of a second "F" results in termination from the degree program. Within the Physics graduate program, a student who receives a "C" as a final course grade will be given an oral warning. Upon receiving a second "C" the student will be issued a written warning. Receipt of a third "C" results in termination from the program.

² A student who finishes all of their coursework is expected to make satisfactory progress in their research. Satisfactory progress is assessed by the research mentor, the thesis committee, and the graduate committee. Failure to meet the appropriate progress will trigger a written warning. Continued failure can trigger withholding of pay and/or termination from the program.

- Complete three sections:
 - I. Successfully completed courses
 - II. Fulfilled examination requirements, (i.e. the Comprehensive Exam)
 - III. Expectations for the next year (one paragraph)
- Submit report to the Director of Graduate Studies (DGS) and the Chair of the Department for review

Second Year

- Complete 4 sections:
 - I. List courses, both completed and outstanding, necessary to fulfill departmental requirements
 - II. Describe all research rotations completed (one paragraph)
 - III. Describe trajectory within the program (ILP or Standard) include progress made toward securing a research apprenticeship or position within a research group
 - IV. Outline goals for the next year (one paragraph)
- Submit report to the DGS, Chair of Department, and all Advisors, if the student has joined a research group

Third Year

- Complete 4 sections where applicable:
 - I. Discuss current research projects either ongoing at Georgetown or performed during the Apprenticeship
 - II. Cite any milestones such as fellowship applications, awards, and publications
 - III. List thesis committee members (Standard Track only) or summarize accomplishments made in apprenticeship (ILP Track only)
 - IV. Outlining goals for the next year, such as preparation for the Qualifying Exam
- Submit report to the DGS and Chair of the Department, all Advisors, and if established, members of the Thesis Committee

Fourth Year and Beyond

- Complete 3 sections where applicable:
 - I. Include a brief description of current research topics, and any milestones to date. For example, publications and fellowships, a list of talks given at scientific meetings, refereeing duties, and any accolades
 - II. List the names of thesis committee members
 - III. Outlining goals for the next year (one paragraph)
- Submit report to the DGS and Chair of the Department, all Advisors, and if established, members of the Thesis Committee

Review of Reports

Reports will be reviewed by all relevant faculty. If faculty approve of the report, this will be sent to the student and indicates maintaining satisfactory progress within the program unless they have been informed otherwise. If faculty raise questions about the report that cannot be

successfully responded to by the student, the thesis committee or an ad hoc committee set by the DGS will evaluate the student's progress with additional scrutiny to determine if satisfactory academic progress is being made.

6. Additional Requirements for Graduate Students

Colloquium

The colloquia are valuable educational events that provide an introduction to areas of current research. The speakers generally present talks appropriate for non-experts. Graduate students are encouraged to suggest speakers and topics for colloquia.

First Years

- Registered for the colloquium course ([PHYS-501](#) in the Fall and [PHYS-502](#) in the Spring)
- Attend **all** colloquia events and participate in a discussion following the talk
- Score a pass or fail based on individual participation

Subsequent Years

- Participation is one of the requirements for making satisfactory academic progress
- Attend at least **five** colloquia each semester
- Exceptions made for a student conducting research off-campus or with conflicting classes or TA assignments
- Notify the instructor of record if circumstances such as illness or an emergency prevent attendance, currently [Amy Liu](#)

Intellectual Property Course

All Ph.D. students are required to take Intellectual Property Issues course (PHYS-523). The course is graded on a pass/fail basis and will only be offered during the summer every 2-3 years.

Lab Rotations

- Purpose
 - Teaches practical research in different groups
 - Develops experimental and computational skills
 - Assists specialization decision leading to the dissertation
- Expectation
 - Choose lab rotation in conjunction with the Director of Graduate Studies and your professors
 - Engage in first lab rotation (non-credit) directly after the Comprehensive Exam
 - Complete the Add/Drop Form
 - Register for 2 half-semester lab rotations, PHYS-535 and PHYS-537 (each worth 1.5 credits), during the fall semester of the Second Year
 - Devote about 10 hours per week on these labs

7. Ph. D. Degree Requirements

Coursework

The Coursework (34 Credits) Typically Includes:

- 15 credits in the core topics:
 - Quantum Mechanics
 - Electricity and Magnetism
 - Statistical Mechanics
 - Condensed Matter Physics
- 4 credits in Experimental and/or Computational Methods
- 3 credits of Lab Rotations
- 3 credits of Colloquia
- 3 credits of introductory business courses for ILP Program Track
- 6 remaining credits of electives chose in consultation with Advisors and the DGS

	Standard Physics Track	Industrial Leadership Track
Fall (Year 1)	Colloquium (PHYS-501) Quantum Mechanics I (PHYS-505) Statistical Mechanics (PHYS-507) Electricity and Magnetism (PHYS-509) Integrated Experience (<i>conducted during exam period</i>)	
Spring (Year 1)	Colloquium (PHYS-502) Quantum Mechanics II (PHYS-506) Computational Physics (PHYS-508) Solid State Physics I (PHYS-510) Integrated Experience (<i>conducted during exam period</i>)	
Summer (Year 1)	Comprehensive Exam (Mid-summer) 1 Physics Lab Rotation (Non-Credit)	
Fall (Year 2)	<u>2 Electives:</u> <ul style="list-style-type: none"> • Dynamic Processes in Biological Physics (PHYS-511) • Solid State Physics II (PHYS-515) • Sensors & Digital Electronics (PHYS-517) • Soft Condensed Matter (PHYS-519) Plus 2 Physics Lab Rotations (PHYS-535 & -537)	Principles of Accounting (ACCT-395) Plus 2 Physics Lab Rotations (PHYS-535 & -538)
Spring (Year 2)	<u>1 Elective:</u> <ul style="list-style-type: none"> • Dynamic Processes in Biological Physics (PHYS-511) • Solid State Physics II (PHYS-515) • Sensors & Digital Electronics (PHYS 517) • Soft Condensed Matter (PHYS-519) Plus <i>Thesis Research – 03 (PHYS 999-03)</i>	Fundamentals of Finance (FINC-395) Sensors & Digital Electronics (PHYS-517) Plus <i>Thesis Research – 03 (PHYS 999-03)</i>

Comprehensive Examination

All Ph.D. students must pass a Comprehensive Examination covering the following subjects at the advanced undergraduate level:

- Quantum Mechanics
- Electricity and Magnetism
- Condensed Matter Physics
- Statistical Mechanics

The exam consists of two (2) 4-hour written parts administered over two consecutive days. It is given once a year, during the summer. If a student's performance on the written exam is borderline between satisfactory and unsatisfactory, the graduate committee may request that the student take an oral exam to allow for a better assessment. Past exam can be found on the [Comprehensive Examination](#) page.

- **Full-time Students:** Sit for the exam during the summer of the student's first and second year, typically a month after exams in mid-July. Those who do not pass the exam can take the exam the following year, but students who do not pass the exam before the beginning of their third year will be terminated from the degree program.
- **Part-time Students:** take the exam by the first summer after completion of their coursework. Part-time students who do not pass can take the exam again the following summer. Failure to pass at that time will result in termination from the Ph.D. program.

Thesis Committee

- Design Thesis Committee before taking the [Qualifying Examination](#)
- Form Committee using the following guidelines:
 - Recruit at least 3 faculty members from the Department
 - Assign 1 faculty member from outside the Department
 - Include at least 1 experimentalist and 1 theorist
 - Involve the Industrial Apprenticeship mentor (for ILP Program Track)
 - Certify members:
 1. Ensure all member possess a Ph.D.
 2. Is a faculty member at a University
 3. Possess a professional appointment at a research institution
 4. Hold a position equal to or exceeding an assistant professor
- Submit the proposed thesis committee to the Graduate Committee for approval at least 6 weeks before the Qualifying Examination
- Report progress regularly to Graduate Committee to ensure a timely conclusion

Qualifying Examination

The Qualifying Examination is a written report and an oral presentation to a student's [Thesis Committee](#). The report and presentation discuss research progress to date and present the proposed thesis project. While there are no length requirements for the examination, most written reports are 15-20 pages and most presentations are 30 minutes long.

ILP Program Track

- Apprenticeship considerations:
 - Take the exam within 6 months of Apprenticeship completion
 - Take the examination no later than 18 months after coursework (provided Apprenticeship is delayed)
 - Detail relevant work conducted on Apprenticeship
- Take the examination 18 months after completion of coursework
- Describe how work motivates thesis proposal
- Present preliminary results

Standard Track

- Take the examination 18 months after completion of coursework
- Provide Thesis Committee members the written report at least 2 weeks prior to the oral presentation
- Present preliminary results

Both the ILP and Standard Track

- **Field questions from the committee members following the presentation:** Questions will probe the depth and breadth of the student's knowledge of the broader research field based on the student's written and oral presentations
- **Results:**
 - Achieve the unanimous approval of the Thesis Committee and therefore advance to Doctoral Candidacy
 - Increased [summer stipend](#)
 - Retake the examination in the event of failure no less than 3 and no more than 6 months after the initial examination
 - Face dismissal from the program after 2nd failure

Dissertation Proposal

Within **1 year** of passing the Qualifying Examination, students must file their [Dissertation Proposal Form](#). Each member of the Thesis Committee, as well as the Director of Graduate Studies, must approve the form before it is submitted to the GPC, who will make a copy for departmental records and submit the original form to the Graduate School.

Dissertation and Defense Preparation

Note: all necessary forms are available on the [Graduate School's Academic Forms](#) page.

1. Complete the [Dissertation Proposal Form](#) with the appropriate signatures and submit to the GPC
2. Consult the [Graduate School's Guidelines for Dissertation and Thesis Writers](#) and adhere to formatting and procedural requirements
3. Download the Dissertation template from the [Graduate School's Dissertation and Thesis Information](#) page.
4. Apply to Graduate using [MyAccess](#)
 - Consult the instructions are available on the Graduate School's [How to Graduate page](#)
 - Apply before the first business day of the month of graduation, e.g. before December 1st for Fall or before May 1st for Spring
5. Ensure Committee – certified by a majority vote – that all shortcomings will be addressed before Defense and only minor revisions will be required after the Defense
6. Deliver draft to Committee **at least six weeks** prior to the target date for Defense
 - Submit by October 30, 2017 for Fall Graduation
 - Submit by March 19, 2017 for Spring Graduation
7. Coordinate date, time, and place for Defense (usually Regent's Hall, Room 351) with the GPC
 - By December 11, 2017 for Fall Graduation
 - By April 23, 2018 for Spring graduation
8. Submit the [Doctoral Dissertation Reviewers Report](#)
 - Submit **at least one week** before Defense date
 - Certifies that Dissertation is ready for Defense
 - Publicly lists Defense on the Graduate School's [Doctoral Defense Schedule](#)

Defense

1. Deliver a public 30-minute oral presentation open to the academic community
2. Answer questions from attendees during the public phase of the exam
3. Answer additional questions by the Thesis Committee during the private phase of the exam

4. Wait immediately following the defense while the Thesis Committee decides the result in a closed meeting
 - Passing the Dissertation Defense requires the approval of all or all but one of the committee members
 - Presenting for a 2nd time must be made within 3 months of the first attempt
 - Failing the defense for the 2nd time will lead to dismissal from the Ph.D. program
5. Revise Dissertation as requested by the Thesis Committee
6. Submit [Dissertation Cover Sheet](#) to the GPC
7. Submit [Electronic Thesis and Dissertation \(ETD\) Release](#) Form to the Graduate School
8. Upload your dissertation for formatting review by the Graduate School.
9. Complete any edits assigned by the Graduate School.
 - Complete edits by the last day of the month in which you intend to graduate; otherwise your dissertation will not be accepted and you will not be eligible to graduate (see below).
 - December 2017 Graduation:
 - Submit your dissertation by December 11, 2017
 - Complete all steps for the Graduate School to approve your dissertation by close of business on December 20, 2017
 - May 2018 Graduation:
 - Submit your dissertation by April 23, 2017
 - Complete all steps for the Graduate School to approve your dissertation by close of business on May 1, 2017
10. Submit your [Survey of Earned Doctorates](#)
11. Lastly, if you may want to put an [embargo](#) on your thesis, in the event that you seek publication or a patent

Elective Credit and Plan Modifications

Requests for modifications to the standard course of study must be made to the graduate committee of the Department of Physics in the form of a written plan of study that lists all of the proposed coursework and provides a rationale for the proposed modifications. The plan must provide the necessary preparation for the student's academic and professional goals, and all necessary pre-requisites for the proposed courses must be satisfied.

Master's in Passing

Once Ph.D. students complete the course requirements, typically at the end of their second year, they are eligible to receive the M.S. degree. Students may request the Master's in Passing degree by submitting the [Student Petition for Change in Graduate Degree](#) form to the Graduate School.

8. Master's Degree Requirements

Master's Options

Students pursuing the M.S. degree may elect to follow one of two tracks:

- **Academic Track:**
 - Complete at least **30 credits** with at least 7 graduate physics courses of 3 credits or more
 - Complete at least 2 additional department-approved courses
- **Thesis Track:**
 - Complete at least **27 credits** with at least 7 graduate physics courses of 3 credits or more and at least 1 additional department-approved course
 - Complete and defend a thesis

	Academic Track	Thesis Track
Fall (Year 1)	Colloquium (PHYS-501) Quantum Mechanics I (PHYS-505) Statistical Mechanics (PHYS-507) Electricity and Magnetism (PHYS-509) Integrated Experience (<i>conducted during exam period</i>)	
Spring (Year 1)	Colloquium (PHYS-502) Quantum Mechanics II (PHYS-506) Computational Physics (PHYS-508) Solid State Physics (PHYS-510) Integrated Experience (<i>conducted during exam period</i>)	
Summer (Year 1)	Comprehensive Examination (Mid-summer) 1 Physics Lab Rotation (Non-Credit)	
Fall (Year 2)	2 Electives: Dynamic Processes in Biological Physics (PHYS-511) Solid State Physics II (PHYS-515) Sensors & Digital Electronics (PHYS-517) Soft Condensed Matter (PHYS-519) Plus 2 Physics Lab Rotations (PHYS-535 & -537)	
Spring (Year 2)	2 Electives: <ul style="list-style-type: none"> • Dynamic Processes in Biological Physics (PHYS-511) • Solid State Physics II (PHYS-515) • Sensors & Digital Electronics (PHYS-517) • Soft Condensed Matter (PHYS-519) Plus <i>Thesis Research* – 03 (PHYS 999-03)</i>	<i>Thesis Research* – 01 (PHYS 999-01)</i>

**Information regarding the thesis is available in the section below*

Thesis

For an M.S. thesis, students are required to form a thesis committee consisting of their research advisor, the director of graduate studies (or an alternate appointed by the DGS), and one other member of the ordinary faculty. The M.S. thesis should be based on research performed at Georgetown or during an industrial apprenticeship.

Students must file a [Thesis Proposal Form](#) with the Graduate School. At the latest, this should be done at the beginning of the semester during which the student plans to apply for the degree. Each member of the thesis committee must approve the form before it is submitted to the Graduate School.

Students should consult the Graduate School's [Guidelines for Dissertation and Thesis Writers](#) before beginning the thesis and should adhere to these formatting and procedural requirements during its preparation.

Committee members should be given a draft of the thesis at least four weeks prior to the target date for the thesis defense. The committee members should notify the student of requests for major revisions at least one week prior to the scheduled defense.

The thesis defense begins with a public presentation by the candidate. The candidate delivers a 45-minute oral presentation at a level appropriate for a general physics audience. Any member of the academic community may attend and ask questions during this phase of the exam. Following the public phase, which lasts about an hour, the committee meets alone with the candidate to ask additional questions. The defense is chaired by a member of the committee other than the thesis advisor.

Immediately following the defense, the committee holds a closed meeting to decide whether the defense was successful. Passing the thesis defense requires a unanimous vote by the committee. A student who does not pass the defense on the first try is allowed a second attempt, which must be made within three months of the first attempt.

Students failing the thesis defense for the second time will be dismissed from the M.S. program. Attempting the thesis defense commits a student to the M.S. with the thesis option. After that point, the student may not switch to the coursework-only M.S. option.

The most up-to-date information on the Master's thesis procedures is located at the Graduate School's [Thesis Information](#) page.

Elective Credit and Plan Modifications

Requests for elective credit or for modifications to any part of the program must be made to the graduate committee of the Department of Physics in the form of a written plan of study that lists all of the proposed coursework and provides a rationale for the proposed modifications. In order to be approved, the plan must provide necessary preparation for the student's academic and professional goals, and all the prerequisites for the proposed courses must be satisfied.

9. ILP Apprenticeship

After completing three or four semesters of coursework and passing the [Comprehensive Exam](#), students on the Industrial Leadership in Physics (ILP) track usually spend one year on an Industrial Apprenticeship. During this time, they work on problems of interest to the industrial partner at the company site. This is a great opportunity for students to use their physics knowledge and skills to solve problems of an applied nature and to experience the R&D environment in a company. Examples of organizations that have recently hosted ILP Apprentices include Procter & Gamble, Luna Technologies, NIST, and IBM.

The research mentor and the Director of Graduate Studies work with the student to identify apprenticeship opportunities based on the student's research interests and experience. Once mutual interest has been established, the faculty mentor and the DGS work with the Office of Sponsored Programs to set up a contract with the company. All apprenticeships must be approved by the Graduate Committee.

Special Considerations for International Students

International students must apply to the [Office of Global Services](#) to get approval for [Curricular Practical Training](#) (CPT), and their apprenticeships must not be longer than 11.5 months. To apply for CPT, students should contact OGS **six weeks** before the start of the Apprenticeship and provide:

1. Letter of offer from the employer
2. Dates of the apprenticeship
3. Letter from the department stating that the apprenticeship is required (see the GPC).
4. Make sure that the GPC has a copy of the student's passport, social security card, visa, and I-20 form

Before beginning any apprenticeship, international students must contact [Lawrence Smith](#) in the [Tax Office](#).

10. Industrial Leadership in Physics Organization (ILPO)

The Industrial Leadership in Physics Organization (ILPO) is an organization created and operated by students. ILPO focuses on developing relationships with other Georgetown graduate programs, building relationships with the business school, and supporting all of the physics graduate students by fostering greater communication and involvement among them. It is affiliated with the Graduate Student Organization and represented therein by an officer from the ILPO.

11. FAQs

Q. What vacation and/or paid leave does a student receive?

A. The university-wide holiday schedule for employees applies to graduate students holding assistantships. Assistantships do not include any paid vacation time.

Q. What if I want to travel during the summer months?

A. If you are receiving a summer service (or non-service) stipend, you are required to be working (or fulfilling degree requirements) during the summer months. Any travel must be approved beforehand, and any absence longer than a month will automatically trigger a loss of pay for that month.

Q. Is there an Honor code for Graduate Students?

A. Yes. All graduate students should follow the guidelines for academic integrity set out in the [Graduate Bulletin](#).

Q. How safe are a student's personal belongings?

A. The campus is generally safe, but burglaries do occur. Thefts of backpacks and laptops have been reported in the Reiss Science Building and Regents Hall. We urge all students to lock office doors to secure their belongings, especially during the summer and winter breaks.

Q. Do graduate students have to pay the Yates Fee?

A. Yes. It is a mandatory fee for all full-time students. The Graduate School Assistantship does not cover this fee.

Q. When do classes begin and end? When are breaks?

A. Please see the Registrar's [academic calendar](#).

12. University Support Resources

If you are ever in need of assistance or would like more information, please consult the following resources or contact the Graduate Program Coordinator.

- [Counseling and Psychiatric Services \(CAPS\)](#)
- [Sexual Harassment & Assault](#)
- [Graduate Student Life Guide](#)
- [Graduate School Bulletin](#)
- [Academic Resource Center](#)
- [Office of Global Services](#)
- [Graduate Student Organization](#)
- [Grievances](#)
- [Graduate Ombudsman](#)



GEORGETOWN UNIVERSITY

Department of Physics